DOCUMENT RESUME

ED 215 333 CS 006 644

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TITLE Improving Children's Reading Comprehension through Instruction in Schematic Aspects of Narratives.
PUB DATE Mar 82
NOTE 13p.; Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY, March 19-23, 1982).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Aptitude; Cognitive Processes; *Concept Formation; Developmental Stages; Grade 4; Intermediate Grades; *Narration; Prior Learning; *Reading Comprehension; Reading Difficulties; *Reading Instruction; *Reading Research
IDENTIFIERS *Schemata; Story Grammar; *Story Structure

ABSTRACT

A study was conducted to determine if instruction in schematic aspects of narratives would enhance children's knowledge of story constituents and their interrelationships and to assess the effect of instruction in narrative schema on the reading comprehension of average and below average readers. Subjects were 20 fourth grade students who had been identified as having poorly developed concepts of story. Ten of these students served as a control group and received dictionary and word study instruction, and 10 were placed in the experimental group and received intensive instruction in narrative structure. All subjects were administered knowledge of story structure tasks and comprehension measures at two points in the study. The results indicated that instruction in schematic aspects of narratives did enhance development of knowledge of story structure for both average and below average readers, and that the instruction had a strong positive effect on reading comprehension. In addition, the effects were realized quickly and were maintained. The findings suggest that instruction in schematic aspects of narratives could be a powerful form of classroom development of instruction in reading comprehension. (FL)

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Improving Children's Reading Comprehension through Instruction in Schematic Aspects of Narratives*

The main purposes of the present study were: 1) to determine if instruction in schematic aspects of narratives would enhance children's knowledge of story constituents and their interrelationships, and 2) to assess the effect of instruction in narrative schema on reading comprehension of average and below average readers.

Three findings from investigations of individuals' knowledge of story characteristics are particularly relevant to the present investigation. First, many individuals do have a sense of an idealized story, i.e., of story constituents and their interrelationships (Applebee, 1978; Botvin & Sutton-Smith, 1977; Mandler, 1978; Mandler & Johnson, 1977; Rumelhart, 1978; Stein, 1979; Thorndyke, 1977; Trabasso et al., in press).

Second, developmental trends in the acquisition of story knowledge can be specified in at least three areas: 1) When text is disorganized, younger children's accuracy of recall deteriorates substantially in comparison to older individuals (cf., Buss et al., in press; Mandler, 1978), suggesting they are less able to impose order on the text as a means of facilitating recall. 2) Some children may lack knowledge of specific story constituents. For example, when asked to

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*Paper presented at the annual meeting of the American Educational Research Association, New York City, March 1982.

produce stories, younger children's responses more frequently lack critical information than do older subjects' (Glenn & Stein, in press). 3) Some children are unaware of appropriate temporal relationships in stories. For example, when critical information is either deleted from text presented to children (cf., Stein & Glenn, 1977) or when the temporal sequence is disrupted (cf., Buss et al., in press; Stein & Glenn, in press), younger children are less able than older ones to restructure the text into an appropriate temporal order.

The third and final relevant finding from prior studies is that implementation of knowledge of structural aspects of narratives may be related to reading ability, with better readers showing greater sensitivity to structural features of stories than poorer readers (cf., Smiley et al., 1977; Vipond, 1980; Weisberg, 1978).

To date, at least two assertions about acquisition of knowledge about stories have not been rigorously explored. First, it may be possible and even necessary to enhance children's knowledge of story characteristics through direct instruction. Second, if knowledge of structural features of narratives is highly related to comprehension, then enhancing children's story knowledge may also improve their comprehension of narratives when reading. The present study was designed to address these two possibilities.

Method

Design and subjects

The design of the study was a two-group repeated measures design. The experimental group received instruction in narrative structure, and the control group received dictionary-word study instruction. Initially, the 50 lowest ranking fourth grade readers (identified by percentile on the California Achievement Test and by teacher judgment) from a pool of 100 in one school were screened to

determine the extent of complexity in their knowledge of story structure. (Screening measures are described below.) Twenty students identified as having the least developed concept of story were then randomly assigned to treatment group, with 10 in each group. Subjects received two phases of instruction, differentiated only by intensity and duration. The first phase was short-term intensive instruction, consisting of six 30 to 45 minute sessions conducted over a two-week period. The second phase was long-term intermittent instruction with distributed practice, consisting of ten 30 to 45 minute sessions over a five week period. The two knowledge of story structure tasks (production and scrambled story recall) and the comprehension measures described in a following section were administered at the end of the first phase (interim tests) and again at the conclusion of the study (final tests.) There were two stories for each task; thus each subject had four screening scores, six interim scores, and six final scores. Administration of measures was counterbalanced.

Instruments and scoring procedures

Knowledge of story structure. Two tasks, a production task and a scrambled story recall task, were selected to assess concept of story. For each task, six stories were developed, two for screening, two for interim testing, and two for final testing. For screening, students were tested individually and oral responses were obtained. For interim and final testing, group-administered, written measures were used.

For the production task, subjects read a story setting and then were asked to finish the story, making it into the best story they could. Responses were rated according to a modification of a categorization system developed by Stein and Glenn (1977) in which stories produced by children are classified as belonging to

one of five categories: descriptive sequence (few casual connections, no Goal), reactive sequence (casual connections, no Goal), abbreviated Episode, complete Episode, and complex story (multiple Episodes). For the present study, Mandler and Johnson's (1977) grammar was used to describe elements in the children's stories. A score of 1 was given for a descriptive sequence, a 2 for a reactive sequence and so on. Interrater reliability for the scoring of the production tasks ranged from .73 to .93 for the six stories.

For the second story knowledge task, subjects read scrambled stories written at the second grade level. Twenty-four hours later they were asked to retell each story, making it into a good story. Kendall's Tau rank order correlation scores were computed for each story for each subject to assess the concordance between the order of statements recalled and the original order of the statements in the canonical version of the story. Interrater reliability ranged from .70 to 1.00 for the six stories.

Comprehension. To assess story comprehension, students read stories (each approximately 400 words long) and answered in writing nine literal and eight inferential questions about each story. The questions for the stories were generated according to a procedure developed by Bormuth (1969) and by Hansen (1981). The stories, taken from a fourth grade basal never used in the state, were rewritten at the mid-second grade level.

Subjects could receive partial credit for an answer, with a possible score of 0 to 3 for each item. Alpha coefficients for estimates of reliability estimates ranged from .84 to .92.

Instruction

So that potentially intervening variables could be controlled, the following

factors were equated for the two groups: 1) instructional time, 2) amount of individual versus group work, 3) degree to which the lessons were structured, 4) broad content area of instruction (language arts), and 5) amount of practice reading and writing stories. Also, the same stories were presented to both groups. The instruction for the story structure group focussed on two points: 1) helping the children to form a sort of "cognitive blueprint" or structure for stories and to elaborate the "blueprint," and 2) increasing their awareness of the relationship between knowledge of story structure and understanding a story. Mandler and Johnson's (1977) description of the structure of a story was used as a basis for instruction. According to their description, there are six categories of information in stories: Setting, Beginning, protagonist's Reaction and Goal, Attempt to achieve the Goal, Outcome, and Ending.

In a typical phase one lesson, 1) there was an overview and review; 2) the teacher told about one story element (e.g., Beginning) by describing it, pointing out the element in a story on a wall chart, and giving two or three other examples of the element; 3) the teacher elicited two or three examples of the story element from the children; 4) the teacher gave non-examples and asked why these were not examples of the element being studied; and 5) the students participated in one or more group or individual activities designed to reinforce the element being taught that day.

Phase two instruction consisted of individual and group activities designed to 1) provide continued reinforcement of knowledge of story constituents, and 2) make the children aware of the relationship between comprehension of a story and knowledge of story structure. An example of a phase two activity is: students read stories, identified the story constituents, and asked and answered questions

designed to tap information from each story part.

Instruction for the control group centered on three main dictionary skills: using phonetic respellings to determine the pronunciation of a word, utilizing a dictionary to identify the correct spelling of an inflected word, and choosing a meaning of a word from the choices listed in the dictionary: A typical lesson plan included the following elements: 1) an overview and review were provided; 2) the teacher introduced the new skill for the day, giving examples of how to use that particular skill; 3) the teacher led the children through the use of the skill in a step by step manner; and 4) the children participated in follow-up practice exercises involving worksheets, games, and/or team competition.

Results

Initial analysis showed no significant difference between the two treatment groups for reading achievement level on the California Achievement Test or for knowledge of story structure prior to instruction. Means and standard deviations for all measures are shown in Table 1.

Knowledge of story structure

A multivariate mixed model repeated measures analysis was done using the eight interim and final story structure knowledge of measures. Only the multivariate test for treatment ($F[2,16]=5.3725$, $p < .02$) was significant. The concept of story group did significantly better than the control group on the knowledge of story structure measures, indicating the instruction in narrative schema was effective in enhancing development of concept of story.

There were some additional indications of post-treatment group differences in knowledge of story structure. The experimental group had greater awareness

of temporal relationships between all adjacent category pairs. In the production task, they more frequently produced a second category predicted by the grammar, given that the first member of the pair was provided. The proportion of occasions (collapsed across interim and final stories) that such adjacencies occurred in protocols for the story structure group were: Setting - Beginning, .65; Beginning - explicitly stated Goal, .46 explicitly stated Goal - Attempt, .87; Attempt - Outcome, 1.00; and Outcome - Ending, .86. The corresponding proportions for the dictionary group were: .25, .22, .50, .78, and .78, respectively.

Also, supplementary analyses of the scrambled story task showed that story structure instruction positively affected accuracy of recall (multivariate F $[1,17] = 6.6784$, $p < .02$), as well as subjects' ability to infer and integrate information when specific content was later forgotten. (The story structure instruction group produced more distortions [multivariate F $[1,17] = 9.2913$, $p < .01$] and additions [multivariate F $[1,17] = 4.7447$, $p < .05$] than did the control groups.)

Comprehension

A multivariate repeated measures analysis was done using the four comprehension scores. Only the effects for treatment ($F[1,17] = 9.5511$; $p < .0167$), time ($F[1,17] = 5.5910$; $p < .0402$), and story within time ($F[2,16] = 5.5910$; $p < .0403$) were significant. The story structure group outscored the control group, indicating that instruction in narrative structure had an effect on reading comprehension. Also, both groups' comprehension improved over time. The significant story effect was due to a large difference between interim stories 1 and 2 in the control group. The control group scored 10.6 points better on the second story than on the first story, while the story structure group scored only 1.9 points higher on the second story.

Conclusions and Implications

The results of the study indicate that instruction in schematic aspects of narratives did enhance development of knowledge of story structure of fourth graders who were average and below average readers; and importantly, the instruction had a strong positive effect on reading comprehension. Futhermore, the effects were realized very quickly, i.e., during the first phase. Though the effects were maintained during phase two, they did not increase in magnitude. Perhaps if the story structure group had received instruction in more complex facets of narrative schema during phase two, the magnitude of difference between the two groups might have been increased at the end of instruction.

The most important implication of the study is that the findings suggest instruction in schematic aspects of narratives could be a powerful form of classroom instruction in reading comprehension.

References

Applebee, A. N. Child's concept of story: Ages 2-17. Chicago: University of Chicago Press, 1978.

Bormuth, J. R. An operational definition of comprehension instruction. In K. Goodman & J. Fleming (Eds.), Psycholinguistics and the teaching of reading. Newark, Del.: International Reading Association, 1969.

Botvin, G. J., & Sutton-Smith, B. The development of structural complexity in children's fantasy narratives. Developmental Psychology. 1977, 13, 377-388.

Buss, R., Yussen, R., Matthews, S. R. II, Miller, E., & Rembold, L. Development of children's use of a story schema to retrieve information. Developmental Psychology, in press.

Glenn, C. G., & Stein, N. L. Syntactic structures and real world themes in stories generated by children (Technical Report). Champaign, Ill.: University of Illinois, Center for the Study of Reading, in press.

Hansen, Jane. The effects of inference training and practice on young children's reading comprehension. Reading Research Quarterly, 1981, 16, 391-417.

Mandler, J. M. A code in the node: The use of a story schema in retrieval. Discourse Processes, 1978, 1, 14-35.

Mandler, J. M., & Johnson, N. S. Remembrance of things parsed: Story structure and recall. Cognitive Psychology, 1977, 9, 111-151.

Rumelhart, D. E. Understanding and summarizing brief stories. In D. LaBerge & J. Samuels (Eds.), Basic processes in reading: Perception and comprehension. Hillsdale, N. J.: Lawrence Erlbaum, 1978.

Smiley, S. S., Oakley, D. D., Worthen, D., Campione, J. C., & Brown, A. L. Recall of thematically relevant material by adolescent good and poor readers as a function of written versus oral presentation. Journal of Educational Psychology, 1977, 69, 381-387.

Stein, N. L. How children understand stories: A developmental analysis. In L. Katz (Ed.). Current topics in early childhood education (Vol.2). Hillsdale, N. J.: Ablex, 1979.

Stein, N. L., Glenn, C. G. Children's concept of time: The development of a story schema. In W. J. Friedman (Ed.), The developmental psychology of time. N. Y.: Academic Press, in press.

Stein, N. L., & Glenn, C. G. A developmental study of children's construction of stories. Paper presented at the annual meeting of the Society for Research in Child Development, New Orleans, 1977.

Thorndyke, P. Cognitive structures in comprehension and memory of narrative discourse. Cognitive Psychology, 1977. 9, 97-110.

Trabasso, T., Stein, N. L., & Johnson, L. Children's knowledge of events: A causal analysis of story structure. In G. Bower (Ed.), Learning and motivation (Vol. 15). N. Y.: Academic Press, in press.

Vipond, D. Micro- and macroprocesses in text comprehension. Journal of Verbal Learning and Verbal Behavior, 1980, 19, 276-298.

Weisberg, R. A comparison of good and poor readers' ability to understand explicit and implicit information in short stories based on two modes of presentation. Unpublished doctoral dissertation. Temple University, 1978.

Table 1

Group Means (and Standard Deviations) on All Measures

Screening

Group	Production Story 1	Production Story 2	Scrambled Story 1	Scrambled Story 2	California Achievement Test Reading Percentile
Story Structure	1.60 (.84)	1.60 (.97)	.47 (.40)	.42 (.48)	45.80 (11.40)
Dictionary-Word Study	1.44 (.73)	1.44 (.73)	.41 (.44)	.11 (.33)	42.20 (12.18)

Interim

Group	Production Story 1	Production Story 2	Scrambled Story 1	Scrambled Story 2	Comprehension[a] Story 1	Comprehension[a] Story 2
Story Structure	3.60 (.97)	2.80 (1.32)	.71 (.40)	.37 (.49)	31.10 (5.43)	33.00 (6.94)
Dictionary-Word Study	2.11 (1.45)	1.67 (.71)	.31 (.47)	.33 (.49)	17.00 (6.36)	27.56 (11.62)

Final

Group	Production Story 1	Production Story 2	Scrambled Story 1	Scrambled Story 2	Comprehension[a] Story 1	Comprehension[a] Story 2
Story Structure	3.60 (1.17)	3.40 (1.26)	.45 (.48)	.80 (.42)	34.50 (4.06)	36.00 (9.0)
Dictionary Word Study	2.33 (1.41)	2.11 (1.45)	.48 (.50)	.22 (.44)	26.78 (10.69)	23.44 (11.83)

[a]The highest possible score was 51.